# SOUNDSYNC..

ABSTRACT

The "SOUNDSYNC" database is designed to manage a music store's operations. It includes information about artists, albums, genres, playlists, customers, and invoices. Tracks are associated with albums, genres, and playlists, allowing for diverse categorization and organization. Invoices track customer purchases, with invoice lines detailing the individual tracks purchased along with their quantities and prices.

This database could be further expanded with features like user authentication, more detailed customer profiles, ratings, reviews, and perhaps integration with an online music streaming service. Additionally, indexes and constraints could be added for optimization and data integrity.

ER-DIAGRAM
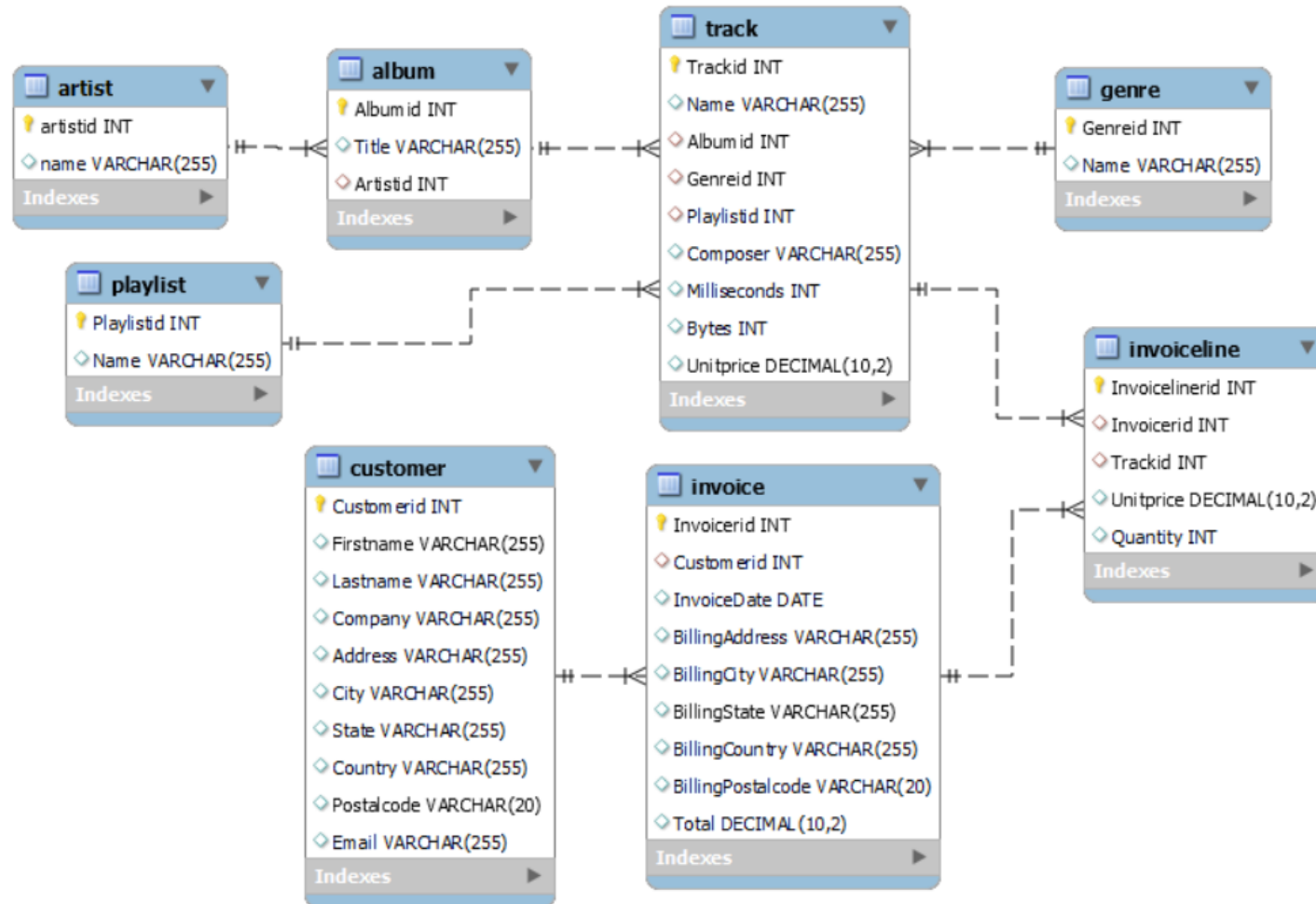
Structure of Table

Artist Table:

This table shows the Artist details ,

Artistid and name .

Syntax:desc Artist;

Structure of Table

Album Table:

This table shows the Album details ,

Albumid , Title and Artistid .

Syntax:desc Album;

Structure of Table

Genre Table:

This table shows the Genre details ,

Genreid and name.

Syntax:desc Genre;


```
88 •    desc Genre;
```

Field	Type	Null	Key	Default	Extra
Genreid	int	NO	PRI	NULL	
Name	varchar(255)	YES		NULL	

Structure of Table

Playlist Table:

This table shows the Playlist details ,

Plylistid and Name.

Syntax:desc Playlist;


```
119 •    desc Playlist;
```

Field	Type	Null	Key	Default	Extra
Playlistid	int	NO	PRI	NULL	
Name	varchar(255)	YES		NULL	

Structure of Table

Customer Table:

This table shows the Customer details ,

Customerid, Firstname, Lastname, Company, Address, City, State, Country, Postalcode and Email .

Syntax:desc Customer;

```
157  •  desc customer;
```

Field	Type	Null	Key	Default	Extra
Customerid	int	NO	PRI	NULL	
Firstname	varchar(255)	YES		NULL	
Lastname	varchar(255)	YES		NULL	
Company	varchar(255)	YES		NULL	
Address	varchar(255)	YES		NULL	
City	varchar(255)	YES		NULL	
State	varchar(255)	YES		NULL	
Country	varchar(255)	YES		NULL	
Postalcode	varchar(20)	YES		NULL	
Email	varchar(255)	YES		NULL	

Structure of Table

Invoice Table:

This table shows the Invoice details ,

Invoicerid , Customerid,InvoiceDate, BillingAddress, BillingCity, BillingState, BillingCountry, BillingPostalcode, Total ,

Syntax:desc Invoice;

```
194  •  desc invoice;
```

Field	Type	Null	Key	Default	Extra
Invoicerid	int	NO	PRI	NULL	
Customerid	int	YES	MUL	NULL	
InvoiceDate	date	YES		NULL	
BillingAddress	varchar(255)	YES		NULL	
BillingCity	varchar(255)	YES		NULL	
BillingState	varchar(255)	YES		NULL	
BillingCountry	varchar(255)	YES		NULL	
BillingPostalcode	varchar(20)	YES		NULL	
Total	decimal(10,2)	YES		NULL	

Structure of Table

Track Table:

This table shows the Track details ,

Trackid , Name , Albumid , Genreid , Playlistid, Composer, Milliseconds , Bytes and Unitprice .

Syntax:desc Track;

```
233 •   desc Track;
```

	Field	Type	Null	Key	Default	Extra
▶	Trackid	int	NO	PRI	NULL	
	Name	varchar(255)	YES		NULL	
	Albumid	int	YES	MUL	NULL	
	Genreid	int	YES	MUL	NULL	
	Playlistid	int	YES	MUL	NULL	
	Composer	varchar(255)	YES		NULL	
	Milliseconds	int	YES		NULL	
	Bytes	int	YES		NULL	
	Unitprice	decimal(10,2)	YES		NULL	

Structure of Table

Invoiceline Table:

This table shows the Invoiceline details, Invoicelinerid , Invoicerid, Trackid , Unitprice and Quantity .
Syntax :desc Invoiceline;

```
267 •   desc invoiceline;
```

	Field	Type	Null	Key	Default	Extra
▶	Invoicelinerid	int	NO	PRI	NULL	
	Invoicerid	int	YES	MUL	NULL	
	Trackid	int	YES	MUL	NULL	
	Unitprice	decimal(10,2)	YES		NULL	
	Quantity	int	YES		NULL	

Contents of Table

Artist Table

```
30 •    select * from Artist;
```

artistid	name
1	John Smith
2	Emily Johnson
3	Michael Brown
4	Sarah Davis
5	Chris Wilson
6	Jessica Martinez
7	David Anderson
8	Jennifer Taylor
9	Matthew Clark
10	Amanda Rodriguez
11	James Thomas
12	Elizabeth Garcia
13	Daniel Hernandez
14	Lisa Lopez
15	Kevin Martinez
16	Mary Wilson
17	Brian Gonzalez
18	Patricia Lee
19	Mark Robinson
20	Laura Moore
NULL	NULL

Album Table

```
60 •    select * from Album;
```

Albumid	Title	Artistid
1	Greatest Hits	1
2	Love Songs	2
3	Best of Rock	3
4	Acoustic Sessions	4
5	90s Classics	5
6	Jazz Nights	6
7	Pop Anthems	7
8	Country Road	8
9	Electronic Beats	9
10	R&B Grooves	10
11	Classical Master...	11
12	Indie Vibes	12
13	Hip Hop Hits	13
14	Reggae Fever	14
15	Soulful Sounds	15
16	Latin Flavor	16
17	Folk Favorites	17
18	Disco Fever	18
19	Alternative Beats	19
20	Rock Ballads	20
NULL	NULL	NULL

Contents of Table

Genre Table

```
91 •  select * from genre;
```

Genreid	Name
11	Rock
12	Pop
13	Jazz
14	Blues
15	R&B
16	Hip Hop
17	Country
18	Electronic
19	Classical
20	Reggae
21	Folk
22	Indie
23	Metal
24	Punk
25	Soul
26	Latin
27	Funk
28	Disco
29	Alternative
30	World
NULL	NULL

Playlist Table

```
120 •  select * from Playlist;
```

Playlistid	Name
1	Morning Vibes
2	Workout Mix
3	Chillout Lounge
4	Road Trip Jams
5	Study Beats
6	Party Anthems
7	Throwback Hits
8	Relaxation Station
9	Country Roads
10	Late Night Jazz
11	90s Classics
12	Indie Hits
13	Hip Hop Hype
14	Reggae Vibes
15	Soulful Sounds
16	Latin Grooves
17	Folk Favorites
18	Electronic Beats
19	Rock On
20	Classical Serenade
NULL	NULL

Contents of Table

Customer Table

```
158 •   select*from customer;
```

Customerid	Firstname	Lastname	Company	Address	City	State	Country	Postalcode	Email
101	Tanay	Dt	ABC Corp	123 Main St	New York	NY	USA	10001	Tan.d@gmal.com
102	Shredh	Sm	XYZ Inc	456 Elm St	Los Angeles	CA	USA	90001	ss.sm@gamil.com
103	Methil	serii	We Company	789 Oak St	Chicago	IL	USA	60001	michael.johnson@gamil.com
104	Sara	Wili	Acme Corporation	101 Pine St	Houston	TX	USA	77001	sara.wiliams@gamil.com
105	Chre	Brow	Tech Solutions	222 Maple St	San Francisco	CA	USA	94101	chre.brow@gamil.com
106	Jesa	Davis	Smith & Co	333 Cedar St	Miami	FL	USA	33101	jesa.davis@gamil.com
107	Dav	Wison	Johnson Enterprises	444 Birch St	Seattle	WA	USA	98101	dav.wison@gamil.com
108	Jenni	Mainez	Taylor Group	555 Walnut St	Boston	MA	USA	02101	jenni.marinez@gamil.com
109	Mather	terson	Anderson LLC	666 Cherry St	Dallas	TX	USA	75201	mathew.terson@gamil.com
110	Ananda	Taylor	Taylor & Sons	777 Cedar St	Phoenix	AZ	USA	85001	ananda.taylor@gamil.com
111	Jay	Thomas	Thomas Enterprises	888 Oak St	Portland	OR	USA	97201	jay.thomas@gamil.com
112	Elith	Ghrcia	Ghrcia Corp	999 Elm St	Philadelphia	PA	USA	19101	elith.ghrcia@gamil.com
113	Darsh	Herz	Herz Industries	1010 Maple St	San Diego	CA	USA	92101	darsh.herz@gamil.com
114	Lisa	Lop	Lopez Enterprises	1111 Pine St	Las Vegas	NV	USA	89101	lisa.lop@gamil.com
115	Krian	meh	Clark & Co	1212 Oak St	Atlanta	GA	USA	30301	krina.clark@gamil.com
116	Mary	Rodrz	Rodrz Group	1313 Cedar St	Austin	TX	USA	78701	mary.rodrz@gamil.com
117	Bhahesh	Gonza	Gonza Ltd	1414 Maple St	Denver	CO	USA	80201	bhav.gonzalez@gamil.com
118	Prachi	Lee	Lee & Partners	1515 Pine St	Minneapolis	MN	USA	55401	prachi.lee@gamil.com
119	Maan	Rison	Rison Industries	1616 Elm St	Detroit	MI	USA	48201	maan.rison@gamil.com
120	Lila	More	More Corporation	1717 Oak St	San Antonio	TX	USA	78201	lila.more@gamil.com
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Contents of Table

Invoice Table

```
195 •   select * from invoice;
```

Invoiceid	Customerid	InvoiceDate	BillingAddress	BillingCity	BillingState	BillingCountry	BillingPostalcode	Total
1	101	2023-01-05	123 Main St	New York	NY	USA	10001	50.00
2	102	2023-02-10	456 Elm St	Los Angeles	CA	USA	90001	75.00
3	103	2023-03-15	789 Oak St	Chicago	IL	USA	60001	100.00
4	104	2023-04-20	101 Pine St	Houston	TX	USA	77001	125.00
5	105	2023-05-25	222 Maple St	San Francisco	CA	USA	94101	150.00
6	106	2023-06-30	333 Cedar St	Miami	FL	USA	33101	175.00
7	107	2023-07-05	444 Birch St	Seattle	WA	USA	98101	200.00
8	108	2023-08-10	555 Walnut St	Boston	MA	USA	02101	225.00
9	109	2023-09-15	666 Cherry St	Dallas	TX	USA	75201	250.00
10	110	2023-10-20	777 Cedar St	Phoenix	AZ	USA	85001	275.00
11	111	2023-11-25	888 Oak St	Portland	OR	USA	97201	300.00
12	112	2023-12-30	999 Elm St	Philadelphia	PA	USA	19101	325.00
13	113	2024-01-05	1010 Maple St	San Diego	CA	USA	92101	350.00
14	114	2024-02-10	1111 Pine St	Las Vegas	NV	USA	89101	375.00
15	115	2024-03-15	1212 Oak St	Atlanta	GA	USA	30301	400.00
16	116	2024-04-20	1313 Cedar St	Austin	TX	USA	78701	425.00
17	117	2024-05-25	1414 Maple St	Denver	CO	USA	80201	450.00
18	118	2024-06-30	1515 Pine St	Minneapolis	MN	USA	55401	475.00
19	119	2024-07-05	1616 Elm St	Detroit	MI	USA	48201	500.00
20	120	2024-08-10	1717 Oak St	San Antonio	TX	USA	78201	525.00
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Contents of Table

Track Table

```
234 •    select * from Track;
```

Trackid	Name	Albumid	Genreid	Playlistid	Composer	Milliseconds	Bytes	Unitprice
1001	Song 1	1	11	1	Composer A	300000	5000000	0.99
1002	Song 2	1	12	2	Composer B	250000	4500000	0.99
1003	Song 3	2	13	3	Composer C	320000	5200000	0.99
1004	Song 4	2	14	4	Composer D	280000	4800000	0.99
1005	Song 5	3	15	5	Composer E	270000	4700000	0.99
1006	Song 6	3	16	6	Composer F	310000	5100000	0.99
1007	Song 7	4	17	7	Composer G	290000	4900000	0.99
1008	Song 8	4	18	8	Composer H	330000	5300000	0.99
1009	Song 9	5	19	9	Composer I	260000	4600000	0.99
1010	Song 10	5	20	10	Composer J	340000	5400000	0.99
1011	Song 11	6	21	11	Composer K	350000	5500000	0.99
1012	Song 12	6	22	12	Composer L	240000	4400000	0.99
1013	Song 13	7	23	13	Composer M	380000	5800000	0.99
1014	Song 14	7	24	14	Composer N	220000	4200000	0.99
1015	Song 15	8	25	15	Composer O	360000	5600000	0.99
1016	Song 16	8	26	16	Composer P	230000	4300000	0.99
1017	Song 17	9	27	17	Composer Q	370000	5700000	0.99
1018	Song 18	9	28	18	Composer R	210000	4100000	0.99
1019	Song 19	10	29	19	Composer S	380000	5800000	0.99
1020	Song 20	10	30	20	Composer T	200000	4000000	0.99
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Invoiceline Table

```
268 •    select * from invoiceline;
```

Invoicelinerid	Invoicerid	Trackid	Unitprice	Quantity
2011	1	1001	0.99	1
2012	2	1002	0.99	3
2013	3	1003	0.99	4
2014	4	1004	0.99	5
2015	5	1005	0.99	6
2016	6	1006	0.99	3
2017	7	1007	0.99	8
2018	8	1008	0.99	6
2019	9	1009	0.99	10
2020	10	1010	0.99	5
2021	11	1011	0.99	2
2022	12	1012	0.99	3
2023	13	1013	0.99	1
2024	14	1014	0.99	1
2025	15	1015	0.99	1
2026	16	1016	0.99	1
2027	17	1017	0.99	1
2028	18	1018	0.99	1
2029	19	1019	0.99	1
2030	20	1020	0.99	1
NULL	NULL	NULL	NULL	NULL

SUB-QUERY..

SUB-QUERY..

Which playlist has the most tracks?

Syntax:

SELECT p.Name FROM Playlist p
WHERE p.Playlistid = (SELECT
t.Playlistid   FROM Track t
GROUP BY t.Playlistid
 ORDER BY COUNT(*) DESC
LIMIT 1);

SUB-QUERY..

1) Which albums have not been purchased yet?

Syntax:

SELECT Title FROM Album WHERE Albumid NOT IN (SELECT DISTINCT Albumid FROM Track) limit 5;

```
276     -- 1) Which albums have not been purchased yet?
277 •   SELECT Title
278     FROM Album
279     WHERE Albumid NOT IN (
280         SELECT DISTINCT Albumid
281         FROM Track
282     )limit 5;
```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: 𝐼𝐴 | Fetch |

Title
▶ Classical Masterpieces
Indie Vibes
Hip Hop Hits
Reggae Fever
Soulful Sounds

SUB-QUERY..

2) the total number of invoices made by customers from California.

Syntax:

SELECT COUNT(*) FROM Invoice WHERE Customerid IN (SELECT Customerid FROM Customer WHERE State = 'CA');

3) How many invoices have been issued per year?

Syntax:

SELECT YEAR(InvoiceDate) AS Year,
COUNT(*) AS Invoice_Count
FROM Invoice GROUP BY Year;

```
284      -- 3) How many invoices have been issued per year?
285 •    SELECT YEAR(InvoiceDate) AS Year, COUNT(*) AS Invoice_Count
286      FROM Invoice
287      GROUP BY Year;
288
```

| Result Grid | | Filter Rows: | Export: | Wrap Cell Content: |

	Year	Invoice_Count
▶	2023	12
	2024	8

SUB-QUERY..

4)What are the top 3 genres based on the number of tracks sold?

Syntax:

SELECT Name FROM Genre WHERE Genreid IN (SELECT Genreid   FROM Track WHERE Trackid IN(SELECT Trackid FROM Invoiceline) GROUP BY Genreid   ORDER BY COUNT(Trackid) DESC)limit 3 ;

```
297       -- 4)What are the top 3 genres based on the number of tracks sold?
298  •    SELECT Name
299       FROM Genre
300  ⊖    WHERE Genreid IN (
301            SELECT Genreid
302            FROM Track
303  ⊖        WHERE Trackid IN (
304                SELECT Trackid
305                FROM Invoiceline
306            )
307            GROUP BY Genreid
308            ORDER BY COUNT(Trackid) DESC
309       )
310       limit 3 ;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Name
Rock
Pop
Jazz

SUB-QUERY..

5) Get the total revenue from the invoices that include tracks composed by 'Composer M'.

Syntax:

SELECT SUM(Total) FROM Invoice WHERE Invoicerid IN (SELECT Invoicerid FROM Invoiceline WHERE Trackid IN (SELECT Trackid FROM Track WHERE Composer = 'Composer M'));

```
312     -- 5) Get the total revenue from the invoices that include tracks composed by 'Composer M'.
313  •  SELECT SUM(Total)
314     FROM Invoice
315     WHERE Invoicerid IN (SELECT Invoicerid
316                          FROM Invoiceline
317                          WHERE Trackid IN (SELECT Trackid
318                                            FROM Track
319                                            WHERE Composer = 'Composer M'));
```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

SUM(Total)
▶ 350.00

6)Find the total number of invoices, total sales amount, and average sales amount per invoice.

Syntax:

SELECT (SELECT COUNT(*) FROM Invoice) AS TotalInvoices, (SELECT SUM(Total) FROM Invoice) AS TotalSalesAmount, (SELECT AVG(Total) FROM Invoice) AS AvgSalesAmount;
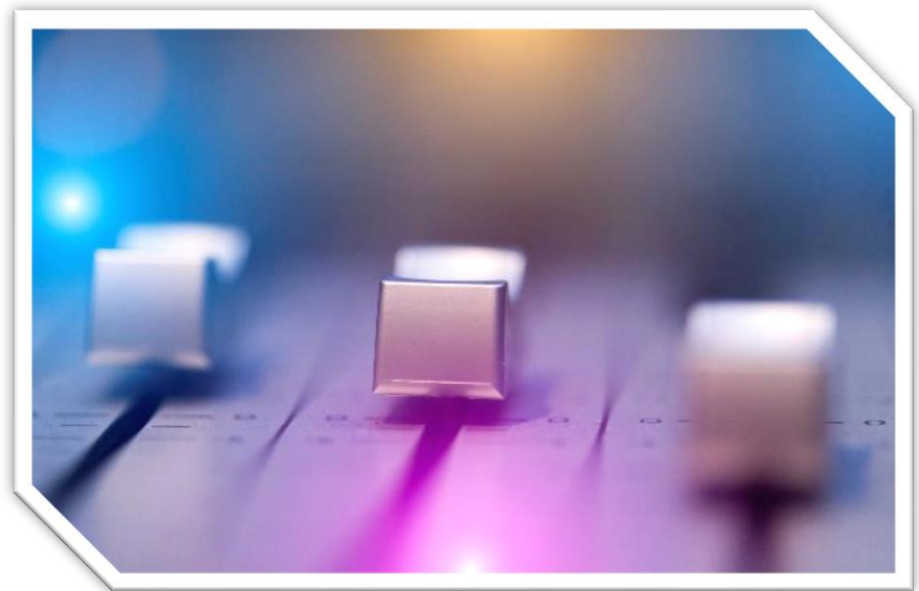
JOINS..

JOINS..

1)List all tracks along with their genres and the number of milliseconds it takes to play each track

Syntax:

SELECT t.Name AS TrackName, g.Name AS Genre, t.Milliseconds FROM Track t
INNER JOIN Genre g ON t.Genreid=g.Genreid;

2)List all playlists along with the number of tracks in each playlist

Syntax:

SELECT p.Name AS PlaylistName,
COUNT(t.Trackid) AS TrackCount FROM Playlist p
LEFT JOIN Track t ON p.Playlistid = t.Playlistid
GROUP BY p.Playlistid limit 5;

```
351     -- 2)List all playlists along with the number of tracks in each playlist:
352 •   SELECT p.Name AS PlaylistName, COUNT(t.Trackid) AS TrackCount
353     FROM Playlist p
354     LEFT JOIN Track t ON p.Playlistid = t.Playlistid
355     GROUP BY p.Playlistid
356     limit 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

PlaylistName	TrackCount
Morning Vibes	1
Workout Mix	1
Chillout Lounge	1
Road Trip Jams	1
Study Beats	1

3)Combine all playlists with all tracks to see all possible combinations.

Syntax:

SELECT * FROM Playlist CROSS JOIN Track limit 10;

```
383    -- 3)Combine all playlists with all tracks to see all possible combinations.
384  • SELECT *
385    FROM Playlist
386    CROSS JOIN Track limit 10;
387
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Playlistid	Name	Trackid	Name	Albumid	Genreid	Playlistid	Composer	Milliseconds	Bytes	Unitprice
20	Classical Serenade	1001	Song 1	1	11	1	Composer A	300000	5000000	0.99
19	Rock On	1001	Song 1	1	11	1	Composer A	300000	5000000	0.99
18	Electronic Beats	1001	Song 1	1	11	1	Composer A	300000	5000000	0.99
17	Folk Favorites	1001	Song 1	1	11	1	Composer A	300000	5000000	0.99
16	Latin Grooves	1001	Song 1	1	11	1	Composer A	300000	5000000	0.99
15	Soulful Sounds	1001	Song 1	1	11	1	Composer A	300000	5000000	0.99
14	Reggae Vibes	1001	Song 1	1	11	1	Composer A	300000	5000000	0.99
13	Hip Hop Hype	1001	Song 1	1	11	1	Composer A	300000	5000000	0.99
12	Indie Hits	1001	Song 1	1	11	1	Composer A	300000	5000000	0.99
11	90s Classics	1001	Song 1	1	11	1	Composer A	300000	5000000	0.99

JOINS..

4)Show all customers and their invoices, including those who haven't made any purchases yet.

Syntax :

SELECT *FROM Customer RIGHT JOIN Invoice ON Customer.Customerid = Invoice.Customerid limit 10;

MULTIPLE JOINS..

Retrieve the names of customers who have purchased tracks composed by 'Composer A'.

Syntax :

SELECT c.Firstname, c.Lastname FROM Customer c
JOIN Invoice i ON c.Customerid = i.Customerid
JOIN Invoiceline il ON i.Invoicerid = il.Invoicerid
JOIN Track t ON il.Trackid = t.Trackid WHERE
t.Composer = 'Composer A';

```
399     -- Retrieve the names of customers who have purchased tracks composed by 'Composer A'.
400 •   SELECT c.Firstname, c.Lastname
401     FROM Customer c
402     JOIN Invoice i ON c.Customerid = i.Customerid
403     JOIN Invoiceline il ON i.Invoicerid = il.Invoicerid
404     JOIN Track t ON il.Trackid = t.Trackid
405     WHERE t.Composer = 'Composer A';
406
```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

Firstname	Lastname
Tanay	Dt

THANK YOU..!

Sumedh Motghare..

IT Vedant

Nov23-T313/DS/PS-11TO 1